

THE EFFECT OF FOOT STRENGTH AND SPEED TRAINING ON THE RESULTS OF THE EXTRACURRICULAR ATHLETICATHLETIC LEVEL OF MTs. HIDAYATUL MUBTADI'IN BANYUWANGI DISTRICT

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ABSTRACT

Athletics is the oldest sport owned by humans, because its basic movements have been reflected in human life for a long time, namely walking, running, jumping and throwing. Athletics is a sport that underlies another sport of Florence in Maulana (2016). Furthermore, according to Bakar (2019) athletics is an effective physical activity to optimize children's growth and development. One of the categories of athletics, especially in jump numbers, is multi-jump. The type of research used in this study is a quasi experiment. According to Suharsimi Arikunto (2010), states that experimental research is research that is intended to determine whether or not there is a consequence of "something" imposed on the subject under investigation or under study. In other words, experimental research tries to examine whether there is a causal relationship, the way is to compare the conditions before and after being treated. The results of the exercise squat jump can increase leg muscle strength so that it can increase the jump distance in multiple jumps. The results of the t-test data analysis show a 2-tailed sig value < p-value (0.05) so that it can be concluded that there is an effect of Squat jump training on the jump results of Mts Hidayatul mubtadiin extracurricular athletic students 2019/2020.

Keywords : *Effect Of Foot Strength, Speed Training, Extracurricular Athleticathletic*

INTRODUCTION

The development of sports at this time has grown very rapidly, the community has increasingly realized the importance of activity, sports, achievements, community sports or sports for health. The purpose of exercising varies according to the activities carried out by Widiastuti in Maulana (2016). Sports are physical activities that are carried out systematically, have rules and are carried out deliberately, with the aim and purpose of building physical, spiritual and social health. In sports it does not only involve the musculoskeletal system alone, but also includes other systems such as the cardiovascular system, respiratory system, excretory system, nervous system and many more. Talking about sports, of course we know that sports aim to gain achievement because exercise is not only to nourish the body but also to get the highest achievement. One of the sports that is often contested is athletics.

Athletics is the oldest sport owned by humans, because its basic movements have been reflected in human

life for a long time, namely walking, running, jumping and throwing. Athletics is a sport that underlies another sport of Florence in Maulana (2016). Furthermore, according to Bakar (2019) athletics is an effective physical activity to optimize children's growth and development. One of the categories of athletics, especially in jump numbers, is multi-jump.

Triple jump technique includes 1. Lari prefix (approach) 2. hopscotch (hop) 3. step (step) 4. Lompat (Jump). In multiplying itself, strength and speed are also needed, so training is needed that can support this, including squat jumps, skipping and sprinting.

Based on the results of observations that have been carried out, that the activity of multi-jumping in MTs schools. Hidayatul Muhtadi'in has problems with the result or jump distance in multi-jump sports. Apart from this, the school itself wants new activities in the field of athletic sports, because so far the sports in these institutions are only monotonous, like soccer and volleyball. Therefore, the researcher tries to do research in that place by providing a kind of training solution that can increase the results of the jump in multi-jump at the school.

From the description above, the researcher's idea was written to conduct a research with the title "Is there an effect of leg strength and speed training on the results of the athletic extracurricular student MTs. Hidayatul Muhtadi'in". It is hoped that through hoped that it will be squat jumps, skipping and sprinting, it is able to provide changes to the triple jump results of MTs athletic extracurricular students. Hidayatul Muhtadi'in.

Definition of Sports

The role of sport as an engine for the nation and character building has been tested, because sport has the function of building a national spirit. Sport is used as a means of unifying the nation, forming individual and collective characters, and has the potential to dynamize other development sectors. The obligation to contribute to national sports achievements should be our collective responsibility. Sport is a part of the nation's character building tool that must be fought for.

Sport is basically a need for every human being in life, so that physical conditions and health are maintained and one way for health to be well maintained Prasetyo (2013) has another opinion that sports is a systematic way of all activities or efforts that can encourage, improve, and fostering the physical and spiritual potentials of a person as an individual or groups as individuals or community groups in the form of games, competitions, competitions and intensive physical activities to obtain recreation and khamdani victories, in Hidayat, et al (2015).

According to Utami, (2015) Sport is one of the pillars to the glory of a nation. Sports coaching cannot be done centrally or centrally in one area. "Moving forward together towards glory" is an expression to follow up. Going forward together means that each region will be able to provide its best sports performance in accordance with the carrying capacity of the local area, whether ecologically, sociologically or otherwise.

According to Hidayat et al, (2015). Sport is a powerful tool for the physical and mental formation of the nation, by exercising frequently.

Definition of Athletics

Athletics is one of physical and health education, which is a component of overall education that prioritizes physical activity and fostering healthy life and physical, mental, social and emotional development. harmonious, harmonious and balanced. According to Rahmat (2015) Athletics comes from the Greek word *Atlon*, *Atlun* which means a match or struggle. So Athletics according to Indonesian encyclopedics means sports competitions in athletics.

The term athletics comes from the Greek "*Athlon*" which means to compete or compete. Another term that contains the word *Athlon* is pentathlon. This term comes from two words, namely "*penta*" which means five and "*Athlon*" which means competition. So pentathlon means five races or five races. Other terms that use the word athletics are athletics (England), atletiek (Netherlands), *athletique* (France) and athletics (Germany). The term athletics in Indonesia is defined as a sport that competes road, running, jumping and throwing numbers. Other terms that have the same meaning as the terms used in Indonesia are *leicgtathletik* (Germany), *Athletismo* (Spain), sports (Malaysia) and Track and field (USA). Around 400 BC, it turns out that the Irish have carried out sports movements similar to today's athletics. According to a Greek poet named *Humeros* in his book (*Illiad*), it is estimated that athletic activities were already carried out in 1100 BC, such as horse-drawn carriage, boxing, wrestling which began with a running race and closed with a javelin throwing competition. The numbers contested were running competitions. , pentathalon, pankration, wrestling, boxing and horse racing. The champions of the pentathlon (sprinting, long jump, discus throwing, javelin and wrestling) at the Olympics will be crowned Olympic champions.

Definition of exercise

Exercise is an activity that is carried out systematically and planned in improving the functional body of Chan (2012). Meanwhile, according to another opinion, Aditya (2016) training is a systematic conscious effort that is carried out repeatedly

and increases its intensity. Training needs to be done in any sport to form the characteristics of an athlete, doing habituation by trying to improve the development and ability of an athlete to achieve victory. In sports in general, strength and speed are needed, not forgetting the double jump sport itself, these two things are very related.

Principles of training

The types of training principles are divided into eleven, according to Sukadiyanto in Arnandho (2017), which explains in more detail the principles of training, namely:

1. The Principle of Readiness

In the principle of readiness, the material and dose of exercise must be adjusted to the age of the sportsman. Age is closely related to the physiological and psychological readiness of each athlete. This means that the coach must consider and pay attention to the stages of growth and development of each athlete. Because the readiness of each sportsman will vary from one child to another even though there are sportsmen of the same age. This is due to differences in factors such as nutrition, heredity, environment, and calendar age where these factors will affect the level of maturity and readiness of each athlete. In sportsmen who have not yet entered puberty, they

are not physiologically ready to accept the full training load.

2. The principle of Individual

Individual means that each person has different abilities between one another. This means that each athlete has different potentials and abilities, heredity, maturity, nutrition, rest and sleep time, fitness, environment, life background, injuries, and motivation also influence the abilities and ways of athletes in responding to training activities. Therefore, in determining the training load must be adjusted to the ability of each individual. Therefore, for every athlete, his training load must be in accordance with his abilities and cannot be generalized with others.

3. Adaptation Principle

Human organs tend to always be able to adapt to environmental changes. This situation is beneficial in the training process, so that human abilities can be influenced and changed through training. Exercise causes the process of adoption of organs. In connection with the process of the principle of progressivity, if the training load is always progressively increased, the body's organs will adapt to these changes. The level of speed of athletes in adapting to each training load varies from one to another. This, among other things, depends on the age of the athlete, the age (duration) of training, the quality of muscle fitness, the quality of the energy system fitness and the quality (quality) of training.

4. Principle of Overload (Overload)

The training load must reach or slightly exceed the threshold of stimulation but must not always exceed the threshold of stimulation during exercise. This will result in pain and excessive training (overtraining). The training load should be given progressively and changed according to the rate of change in the athlete's ability. To improve physical quality, the way that must be taken is to train by fighting or overcoming training loads. When the body has adapted to a predetermined training load for a certain time, then the next training load must be increased. Therefore, every exercise should always be monitored by taking notes and doing tests at a certain time as a basis for determining the training load in the next exercise. In addition, trainers must have a record of the sportsmen's bio as one of the bases for determining training load. As for how to increase training load, among others, through: (a) heavier, (b) accelerated, and (c) prolonged the process of giving the load (Rahtikawati, et. Al:2020).

5. The principle of

This principle is closely related to the principle of overloadprogressive load, because the provision of a load that is progressive in nature will also imply an overload. In addition, training is progressive, meaning that it must be done consistently, progressively and continuously. Ajeg means that the exercise must be carried out continuously, not sometimes.

Progress means that the exercise must be increased every day. Meanwhile, continuous means that each exercise is a continuation of the previous training process. For this reason, applying the principle of overloading must be carried out gradually, carefully, continuously and precisely. This means that each training goal has a certain timeframe for the athlete to adapt. After the adaptation period has been reached, the training load should begin to increase.

6. Principle of Specifications (Specificity)

Each form of stimulation will be specifically responded to by each sportsman. For that, the training material must be selected according to the needs of the sport. Matters that need to be considered in the specification principle include: (a) specification of energy requirements, (b) specification of form or training model, and (c) specification of motion patterns of the muscle groups involved. For example, the form of agility training on a tennis player will be different from that of a basketball player.

7. The principles of varied

training. A long and monotonous training process will lead to boredom, reluctance, and anxiety in the sportsmen, which will result in both physical and psychological fatigue. For this reason, in preparing an exercise program, the treatment must be varied, so that sportsmen avoid feeling bored (boring). In varying the training load, it can be done by changing the shape or model, place, training facilities and infrastructure and training partners. However, with a note, even though the exercises are varied, the exercises must still refer to the goals and objectives that have been set (Utamajaya et.al, 2020).

8. The Principle of Warming up and cooling down (Warm up and cooling down) In a meeting always begins with a warm-up and ends with cooling (calming down). Therefore, in one training session (face to face) training always contains elements consisting of: (a) warm-up, (b) core training, (c) supplementary exercise, and (d) closing. To get you into the core training, you have to warm up according to the needs of the sport. In addition to core training, supplementary training is needed which can be in the form of playing or a form of physical exercise with an intensity that is tailored to the goal. Therefore, at the end of the exercise, light movements are needed to deliver the physiological process so that the body returns to normal gradually and not suddenly. 9. The Principle of Periodization (Long-Term Exercise)

The process of implementing training should always refer to the periodization, because periodization is a phasing and a translation of the overall training objectives. The ultimate goal of a training process is to achieve optimal performance.

To be able to achieve the best performance requires a long training process and a long period of time. Because various abilities and skills must be mastered, it takes a long time for sportsmen to adapt and apply them into automatic forms of motion. In order to achieve their best performance, athletes need between 8 and 12 exercises that are done regularly, intensively and progressively. For this reason, exercises that require a long time are translated into certain stages (periodization).

10.Principle The Reversibility

meaning of reversibility is that if an athlete stops training, the quality of his organs will automatically decrease. Adaptations that occur as a result of training results will decrease or even disappear, if not practiced or maintained through continuous training. For this reason, the progressive principle must always be implemented so that the abilities and skills of sportsmen are maintained.

11. The principle of moderate load (not excessive).

The success of long-term training, which is translated into the training periodization, will depend on the loading that is moderate or not excessive. This means that the loading must be adjusted to the level of development

and growth of the trainee, so that the training load given is neither too heavy nor too light. Because, if the training load is too light it will not have an impact on increasing abilities and skills. Conversely, if the load is too heavy it will result in injury and even pain or is called overtraining.

12. Principles of Systematic Exercise

Achievement of athletes is unstable and temporary, so that the principle of systematic training must be related, especially with the dose (dose) and priority scale of the training target. Each target exercise has a different dosage rule, so that it will help the adaptation process into the body's organs. Exercise doses that are always heavy each face to face will cause overtraining, whereas doses that are always light have no impact on the body's organs. Therefore, the exercises must be carried out systematically, so that the priority scale of the exercises is needed to be adjusted according to their objectives. The training priority scale is a sequence of main training objectives adjusted for periodization. For example, an outline of the training sequence always starts with physical training, technique, strategy and tactics, psychological aspects and competition maturity.

RESEARCH METHOD

The type of research used in this study is a quasi experiment. According to Suharsimi Arikunto (2010), states that experimental research is research that is intended to determine whether or not there is a consequence of "something" imposed on the subject under investigation or under study. In other words, experimental research tries to examine whether there is a causal relationship, the way is to compare the conditions before and after being treated.

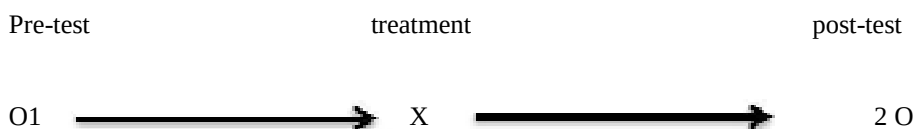


Figure 3.1.one-group pre-test and post-test (Sugiyono, 2013)

O1: Pre-test (before being treated)

O2: Post test (after being treated)

X: treatment (treatment) The

type of research used in this study is quasi experiment. According to Suharsimi Arikunto in Anggun (2010), states that experimental research is research that is intended to determine whether or not there are consequences of "something" imposed on the subject being investigated or studied. In other words, research experimental tries to examine whether or not there is a causal relationship.

The population that will be used by the researcher is the athletic extracurricular class students, totaling 15 boys. As stated by Purwanto in Anggun (2015), explaining that if the researcher does not do it to all individuals in the population but only a part is taken, the part is called a sample. As stated by Sugiyono (2012) explains that the sample is part of the number and characteristics of the population. The technique used in this research is population sampling technique because the population is less than 30 so that all samples are made.

RESEARCH RESULTS AND DISCUSSION

Research Results Prerequisite Test

Table 4.1: Results Pret-test and Post-test

NO	NAME	Pre-test	Post-test
1	MH	8.4	8,6
2	FR	8	8,3
3	AF	8.7	9,0
4	ADT	8.1	8,3
5	RM	8.4	8,7
6	YS	8.4	8,6
7	UL	8.2	8,4
8	HK	7.8	8,0
9	ZA	8.5	8,8
10	MA	8.7	9,1
11	HB	8.8	9,0
12	AK	8.3	8,7
13	MG	8.4	8,6
14	BG	8.6	8,6
15	DF	8.6	8,8

Normality Test

A. Pre-Test and Post-Test Squat jump

Table 4.2: Normality test for Squat jump

Pre-Test LAP	Asymptotic sig (2-sided test)	.977
Post-Test LAP	Asymptotic sig (2-sided test)	.956

From the table calculations using SPSS 21, the value of the pre-test and post-test of significance, 977 and 956. in accordance with the provisions of 14, it can be concluded that the analyzed data distribution normal.

B. Pree-testt and post-test skipping

Table 4.3: Normality Testexercise Skipping

Pre-Test LB	Asymptotic sig (2-sided test)	.993
Post-Test LB	Asymptotic sig (2-sided test)	1.000

From the table estimates using The SPSS 21 pre-test and post-test significance values .933 and 1,000. In accordance with the provisions, it can be concluded that the analyzed data is normally distributed.

C. Pree- Test and Post-test sprint 100m

Table 4.4: 100m Sprint exercise Normality Test

Pre-Test LK	Asymptotic sig (2-sided test)	1.000
Post-Test LK	Asymptotic sig (2-sided test)	.904

From Table calculation using SPSS 21 pre-test and post-test significance (p) 1,000 and 904. In accordance with the provisions, it can be concluded that the analyzed data is normally distributed.

B. HomogeneityThe Homogeneity

Test is carried out so that we can perform the T-Test, while the results of the homogeneous test are as follows:of homogeneity test

Table 4.5: results

DATA	Levene Statistic	df1	f2	Sig. (p)	Description
Achievement jump triple	1.584	2	2	.245	Signifikansi > 0.05= homogeny

From table calculations using SPSS 21, the pre-test and post-test of significance 1.337 greater than 0.05 in accordance with the provisions it can be concluded that the data were analyzed homogeneous.

Hypothesis Testing

A. T-test

Table 4.6:

<i>Pre-test and pots-test</i>	Sig (2-tiled)
<i>Squat jump</i>	.000
<i>Skipping</i>	.003
Run 100 m	.004

Interpretation of paired sample tests using IBM SPSS statistics version 21. Based output on the above, it is known that the pair squat jump, skipping and sprint of 100 meters, the Sig. (2-tailed) of .000, .003 and .004 smaller than 0.05, it can be concluded that there is an effect of squat jump, skipping and sprint 100 meter on the results of the athletic extracurricular jumper of MTs. Hidayatul Muhtadi`in

Data analysis

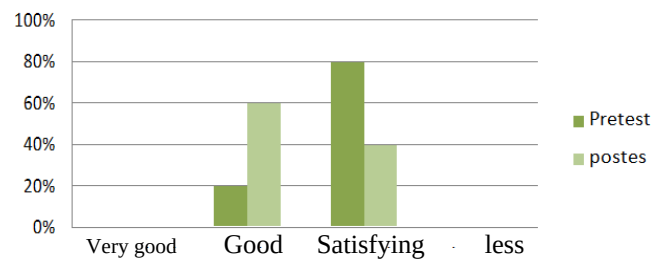
A. training data Squat Jump

Table 4.7 latithan squat jump

Category	<i>Pre-test</i>		<i>Post test</i>	
	f	Percentage	f	Percentage
Very good	0	0%	0	0%
Good	1	20%	3	60%
Satisfactory	4	80%	2	40%
Less	0	0%	0	0%

Of the 5 participants who before getting the exercise treatment squat jump 1 participant got the "good" category, 4 participants got the "satisfactory" category. And after getting the exercise treatment, squat jump 3 participants got the "Good" category, 2 participants got the "satisfying" category.

Training Squat jump



B. Data exercise skipping

Table. 4.7 training Skipping

category	<i>Pre-test</i>		<i>Post test</i>	
	f	Percentage	f	Percentage
Very good	0	0%	0	0%
Good	2	40%	4	80%
Satisfactory	2	40%	1	20%
Less	1	20%	0	0%

Of the 5 participants before receiving treatment In the exercise, Skipping 2 participants get the "Satisfactory" category, 2 participants get the "good" category, 1 participant gets the "poor" category. And after getting the practice treatment, skipping 1 participant got the "satisfactory" category and 4 participants got the "good" category.



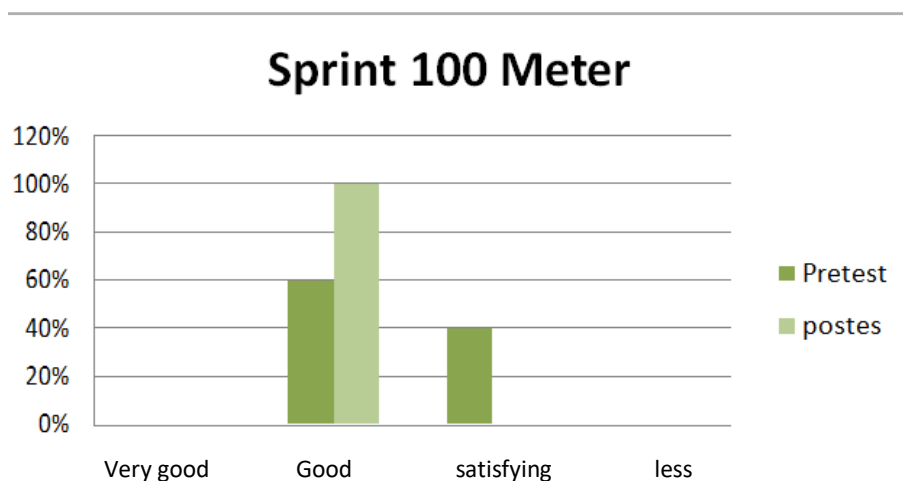
C. Training data Running the 100 m sprint

Table 4.8 training sprint 100 m.

category	<i>Pre-test</i>		<i>Post test</i>	
	f	Percentage	f	Percentage
Very good	0	0%	0	0%
Good	3	60%	5	100%
Satisfactory	2	40%	0	0%
Less	0	0%	0	0%

Figure 4.2 Diagram of training. sprint 100 meter

Of the 5 participants who prior to receiving the training training 100m Sprint there are 2 participants get the category "Satisfactory", 3 participants get the category "good". And after getting the training course treatment, 100m Sprint there were 5 participants in the "good" category. previously there were 2 children in the "satisfactory" category. Sprint 100 Meter



Discussion

Based on the implementation in the field, the researcher analyzed that leg strength and speed were needed in multi-jump activities. The leg strength is needed to support the repulsion. The speed factor also affects the result of the jump .. taking a stride or starting also has an impact between running as fast as possible and running a little slowly has a difference, and also on taking the starting distance because it has an effect on maximizing speed when running. If the two are combined between leg strength and speed, it is likely that the distance between the jumps will be even further.

Based on the description of the data analysis above, it is known that:

1. The results of the exercise squat jump can increase leg muscle strength so that it can increase the jump distance in multiple jumps. The results of the t-test data analysis show a 2-tailed sig value <p-value (0.05) so that it can be concluded that there is an effect of Squat jump training on the jump jump results of Mts Hidayatul mubtadiin extracurricular athletic students 2019/2020.

2. The results of the exercise Skipping can increase the strength of the front end leg muscles so that they can increase the jump distance in multiple jumps. The results of the t-test data analysis show the sig 2- tailed value <p-value (0.05) so that it can be concluded that there is an effect of Squat jump training on the jump jump results of Mts Hidayatul mubtadiin extracurricular athletic students 2019/2020.

3. The results of training the sprint 100 sprint can also increase running speed, so that it can increase the jump distance in multiple jumps. The results of the t-test data analysis show the sig 2-tailed value <p-value (0.05) so it can be concluded that there is an effect of Squat jump training on the jump jump results of Mts Hidayatul mubtadiin Athletic extracurricular students 2019/2020.

Among the three types of speed training, the one that has the most influence on the results of multiple jumps is sprinting, because of the thrust caused by running speed. This result is in accordance with the statement of Suryani (2016). states that with the ability to run quickly as an initial capital to obtain a strong thrust on the pedestal board, so that it produces a large explosive power and the results of the jump can be far.

CONCLUSION

From the above discussion it can be concluded that:

1. There is an effect of atraining jump on the results of the athletic extracurricular students of MTs. Hidayatul Muftadi`in with a Sig (2-tiled) value of 0.000 smaller 0.005
2. There is an effect of training skipping the results of the student's triple jump leap athletics esktrakurikuler MTs.Hidayatul Muftadi`in with the Sig (2- tiled) 0.003 0.005less
3. There'srunning exercises influence Sprint 100 meters to the results of the student's triple jump leap athletics esktrakurikuler MTs.Hidayatul Muftadi`in with Sig value (2-tiled) 0.004 smaller 0.005

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